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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,083	07/16/2003	Arun Somani	900.190US1	1845

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EXAMINER	
WARREN, DAVID S	

ART UNIT	PAPER NUMBER
2837	

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06/14/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/622,083	SOMANI ET AL.	
	Examiner	Art Unit	
	David S. Warren	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16,18-47 and 49-63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-14,24-45 and 55-63* is/are allowed.

6)☒ Claim(s) *15,16,18-23,46,47 and 49-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 15, 18, 20, 46, 49, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chantzis et al (6,417,435) in view of Ludwig (2004/0069128). Regarding claims 15 and 46, Chantzis discloses the use of retrieving a set of musical reference notes (i.e., the scales, arpeggios, and etudes; col. 9, lines 51 – 60), displaying a portion of the data (on display 26), receiving a played note (into microphone 12), comparing the played note and current note (col. 12, 29 – 32), and displaying an indication of a match (col 12, lines 52 – 57). The added limitation of "training a system to recognize a set of notes" appears to be merely inserting notes into the storage unit to be used as references by which to compare a user's performance. The Examiner makes this interpretation based on Applicant's paragraph [0056] which states:

> The training process includes recording the instrument's music note pattern. In some embodiments, a user is prompted to play a series of notes in a range. The user may be able to change the tuning range by modifying the first note and last note of the range through a user interface. After inputting the expected tuning range, the system is ready to be trained. In some embodiments, the system displays a window that shows the current note that needs to be trained into the

> system. For each input note, the program will show the information of this note and current status. In some embodiments, the user can find the current training note, the expected note frequency, the pattern of the note, and the tuning territory on the training user interface. The training interface prompts the user to play one note at a time until the user is satisfied with the training. In some embodiments, the user may confirm each note before the system proceeds further. In some embodiments, the user can choose "Next" to train for the next note, "Replay" to retrain for the current note or "Back" for a previous note. In some embodiments, if a user does not want to continue the training, a "Done" user interface element may be selected, and the rest of the note pattern in the tuning territory will be filled by default values. The program will continue until the last note in the tuning range is received. [Emphasis added]

While Chantzis does not disclose entering a single note per se, Chantzis does disclose entering any desired note pattern (e.g., a mode, or song segment). It would certainly be obvious to one of ordinary skill in the art to provide an ability to enter one note at a time rather than several (i.e., a mode or song segment). The motivation for making this modification would be to allow a user, who may be unskilled in music performance, to slowly enter an entire piece one note at a time. Regarding claims 18 and 49, "pre-programming" the scales, arpeggios, and etudes is deemed to be functionally equivalent to "composing" (col. 12, lines 5 – 8). Regarding claims 20 and 51, a musical segment is synonymous with scales, arpeggios, and etudes.

Claims 16, 19, 21 – 23, 47, 50, and 52 – 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chantzis and Ludwig (discussed supra) in view of Taruguchi et al. (6,380,474). The teachings of Chantzis and Ludwig have been discussed above. Neither Chantzis nor Ludwig disclose the use of changing color nor changing cross-hatching of a played note. Taruguchi discloses the use of a pitch recognition system wherein notes currently being played are visually changed in color and or highlight (col.

5, lines 39 – 41 and lines 44 – 49). The Examiner acknowledges that Taruguchi does not alter the appearance of notes whether they have been played correctly. However, since Chantzis provides data on whether notes were played correctly (an analysis) and Taruguchi provides information by coloring a note, the Examiner maintains that one of ordinary skill would think to combine teachings of Chantzis with Taruguchi to provide feedback by coloring or cross-hatching a note. The motivation for making this combination lies within the Taruguchi teachings, wherein real-time feedback by coloring (or cross-hatching) a note is coloring provides a visual cue as to the correctness of a played note: Visual (i.e., non-verbal) cues are often easier and quicker to understand than statistical results. Regarding claims 19 and 50, the phrase "flash card" is typically employed to "ask a question" with an "answer" available to check the answer. This is precisely how the devices to Chantzis operates; a user is "asked" to perform a scale and/or arpeggio, the user "answers" by playing the scale or arpeggio wherein the user can check his or her performance by viewing the statistics. The Examiner, therefore, maintains that the system of Chantzis is functionally equivalent to a "flash card" or flash card file.

Allowable Subject Matter

Claims 1 – 14, 24 – 45, and 55 – 63 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The Applicant has persuasively convinced the Examiner that the weighting

taught in the prior art (i.e., Ludwig) used as in synthesis is not the same as weighting used in analysis. Also, the prior art is silent as to comparing according to a weighted subset of extracted features.

Claims 15, 16, 18 – 23, 46, 47, and 49 – 54 would be allowable if the Applicant were to add a limitation (to the independent claims) drawn to "training data produced by the instrument itself." For example, the first limitation of claim 15 could read as "training a system to recognize a set of notes played by a musical instrument from one or more reference notes *played by the same instrument*."

Response to Arguments

The rejection of claims 15, 16, 18 – 23, 46, 47, and 49 – 54 is repeated from the previous Office Action (mailed September 25, 2006). The Applicant argues that "[t]he data for the reference note, as played by the instrument, can then be used to compare to a later playing of the note or sequence of notes by the same type of instrument. Using training data produced by the instrument itself as recited in Applicant's claims 15 and 46 is not found in Chantzis. The Examiner concurs. However, as interpreted by the Examiner, claims 15 and 46 do not recite "training data produced by the instrument itself." As stated supra, if this feature is clearly and explicitly added to the claims, these claims will be allowable.

The Applicant also argues that in rejecting claims 15 and 46 the Examiner has used inappropriate motivation in combining Chantzis and Ludwig. The Applicant argues

"there is no support in Ludwig for using weighting to enhance the accuracy of analysis of an input note." The Applicant has erroneously assumed the Examiner's motivation in rejecting claims 1, 24, 32, and 55 to be the same motivation for claims 15 and 46. This is *not* the case. The Examiner did not rely on any "weighting" feature as a motivation to combine the references to reject claims 15 and 46. As stated in the previous Office Action, the Examiner's motivation for combining Chatzis and Ludwig is:

> The motivation for making this modification would be to allow a user, who may be unskilled in music performance, to slowly enter an entire piece one note at a time.

Therefore, the Examiner maintains that this motivation is valid and appropriate.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Warren whose telephone number is 571-272-2076. The examiner can normally be reached on M-F, 9:30 A.M. to 6:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 571-272-2837. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

dsw

LINCOLN DONOVAN
SUPERVISORY PATENT EXAMINER